Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
2003		**00-00-2003 to 00-00-2003**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Space Force Application. Between the Idea and the Reality, Between the Motion and the Act, Falls the Shadow	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Army Space & Missile Defense Command,Army Forces Strategic Command,Redstone Arsenal,AL,35809**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**	**Same as Report (SAR)**	**3**	

Space Force Application

Between the Idea and the Reality, Between the Motion and the Act, Falls the Shadow

-T.S. Eliot, The Hollow Men

By LTC Greg Palka

To all the many theorists, tacticians, and warfighters who are blindly overlooking the coming requirement for the Army to fight **through, from,** and **to** Space, read on. To all of those mired in the comfort of 20th century land domain warfare doctrine and the spirit of the bayonet, listen closely. **As an Army, we can no longer afford to exclusively prosecute land domain warfare simply as a function of land domain forces operating in the confines of terra firma.** The vision of the Objective Force to see first, understand first, act first, and finish decisively speaks to the critical need for our unit of action (UA) forces to leverage non-line-of-sight lethal and nonlethal effects of the air, sea, and Space domains to achieve overmatch and only when prepared to close with and destroy the enemy in direct combat. Beginning with the Stryker Brigade Combat Teams, our Army begins its transition from the 63 tons of twisted steel and heavy force appeal to a mobile, hostile, and agile force that will fight in a very different way. Army Space forces are a critical part of that new mobile, hostile, and agile force and will bring the kinds of non-line-of-sight combat power through Space force application necessary to prosecute 21st century warfare.

For those brothers and sisters in the profession of arms who have no idea what the definition of Space force application is but know the meaning of "lazin' and blazin'," "hurling rockets," and "shakin' and bakin'," fear not. You are well on your way to understanding how lethal and nonlethal effects will be brought to the enemy through, from, and to Space. I am certain that even my brothers on the gunline and those poking through the top end of turrets would have by now perceived that Space force application is the bringing of combat power against terrestrial and celestial-based targets by military weapons systems operating through, from, and to Space. The force application mission area also includes ballistic missile defense and force projection. While there are no force application assets operating in Space today, we must begin to plan and develop the concepts of employment now as we move toward the concepts of "global strike" and "counter anti-access." We must re-evaluate the use of legacy weapon systems and through concept development and experimentation determine the requirements for future weapon systems that give future joint, interagency, and multinational forces the ability to project force and conduct operations through, from, and to Space.

Applying Effects Through Space

Creative minds through the centuries have done the important work of adapting past gains to an ever-changing present, a work which we must continue. — Thomas A. Harris

An example of a legacy weapon system that could provide future conventional lethal and non-lethal Space force application capability is the nation's intercontinental ballistic missile (ICBM) force. Nuclear-tipped ICBMs represent a strategic global strike capability designed to be the ultimate kinetic effect weapon to defend our nation from the threat of nuclear holocaust. ICBMs are the first of the family of Space force application capabilities because they launch from Earth, travel through Space, and re-enter the atmosphere to strike terrestrial targets. ICBMs have several desirable characteristics we should consider regarding future warfare. They are launched under force protection from secured facilities at standoff ranges, are capable of reaching any target within minutes, and are difficult to defend against. A conventionally armed ICBM or conventional ballistic missile will provide part of the future global strike, inter-theater strike capability, and precision lethal and non-lethal effects to the Joint Force commander. These weapons would be particularly effective in counter-anti-access operations. Army

Overcoming inertia to fight battles of the future

Military theorists for centuries have done a great job describing the effectiveness and efficiencies of the "last war." Very few have been able to see into the future and convince those mired in the comfort of past doctrine and scope of capability that warfare has changed.

Space force application is another area where a lack of education and historical inertia will need to be overcome. It is critical for our Army to recognize the significance of this new form of warfare and to begin developing the requirements for the Army's contribution to Space warfare.

Forces could provide a conventionally armed future hybrid of legacy Army tactical, theater high altitude air defense, or Tomahawk land attack missile systems to enable global strike and inter-theater strike capability. These systems would resource the future combatant commanders with options to provide lethal and non-lethal effects from standoff ranges and provide the kinetic punch or non-lethal effect to set the conditions for follow-on forces in land domain combat. We are seeing the first forms of a quasi-inter-theater Space force application mission being conducted today in Operation Iraqi Freedom. Tomahawk land attack missiles launched from the U.S. European Command's area of responsibility (AOR) struck targets in the U. S. Central Command's AOR. This type of capability will only improve and provide our future Force commanders with the agility and flexibility to strike the adversary at will.

Applying Effects from Space

As our nation develops the transformed Joint Force of the 2015 timeframe, we must look to the construct of multipurpose near-Space and Space-based lethal and non-lethal effects weapon systems. These new systems represent our nation's ability to prosecute warfare from Space into the mid-21st century. Near-Space (stratospheric-ionospheric) systems like the SR-71 Blackbird and on-orbit satellite assets have been providing critical information to commanders at all levels of warfare for more than 50 years. As we look to the timeframe of 2015 and beyond, systems that operate in the near-Space and Space domain will become more than information centric systems. They will become integral multipurpose nodes that can see and assist in understanding first and that provide critical ways and means for the unit of employment (UE) commander to act first. Systems like a high altitude airship or geostationary stratospheric-ionospheric satellite (GSIS) could provide not only a platform for advanced sensors and communication systems but a deployment and employment platform for lethal and non-lethal inter-theater and global strike effect weapons. A GSIS could deploy medium-range missile systems, high-powered microwave, radio frequency, and directed energy systems or a legion of microswarming unmanned aerial vehicles representing a commander's first fighter capability to deny, disrupt, degrade, or destroy an adversary's counter-anti-access capability. On-orbit assets provide the Joint Force commander or UE commander to quickly deploy lethal and non-lethal effect systems to the AOR (hours and minutes in some cases based on orbitology). Again, on-orbit assets could provide unique capabilities to prosecute global strike and counter-anti-access warfare. Fighting from near-Space and Space is a critical capability that our nation must experiment with today to be ready for future conflicts. Near-Space and Space-based capabilities will represent not only a key enabler to achieve decision superiority but a multifunction effects platform able to prosecute strike operations early in the conflict to shape the land domain fight. As an aside, we must assume that near-peer competitors of the 2015 timeframe will recognize the incredible capability that our nation's near-Space and Space-based systems represent and design methods of negating this

(See Application, page 53)

combat power overmatch. We must have the ability to repopulate the near-Space and Space-based systems on demand to ensure decision superiority and dynamic, tailorable strike capability.

Applying Effects to Space

In the years beyond 2025, our nation faces the real possibility of prosecuting a future "major combat operation" in Space. This will be a new form of warfare that future generations of Army soldier-leaders will need to study and develop tactics, techniques, and procedures to fight air, land, sea, and Space systems against a foe in Space to seize and hold "key-terrain" or mass our collective joint combat power against an enemy's capability to threaten our way of life and security. Space, like other physical domains, has key terrain that is essential for our Space systems to operate. Certain orbits and specific orbit locations are key to our freedom of maneuver in Space. Lagrange points (places of zero gravity near our Earth and Moon) are key future pre-positioning areas for Space and terrestrial forces apportioned/allocated for actions in terrestrial operations as well as operations in celestial campaigns. Deployment of Space and terrestrial forces from zero gravity points would take hours rather than days and would represent a key capability from a nontraditional line of communication that many future adversaries would be unable to defend. Future adversaries could deploy Space-based weapon systems that would be able to deny, degrade, disrupt, and destroy U.S. or coalition Space-based capabilities. Our nation must develop ground-, air-, sea-, and Space-based weapon systems that can protect our Space-based systems and defeat those of the enemy. The future battlefield management, information, and command control systems must consider not just using Space-based systems to enable terrestrial operations, but consider the requirements to conduct Space warfare.

The more extensive a man's knowledge of what has been done, the greater will be his power of knowing what to do.

— Benjamin Disraeli

Of utmost importance is the future education of young Army officers on the coming concepts of Space warfare and how they as commanders will have to plan and execute lethal and non-lethal effects through, from, and to the Space domain. The time to begin is now.